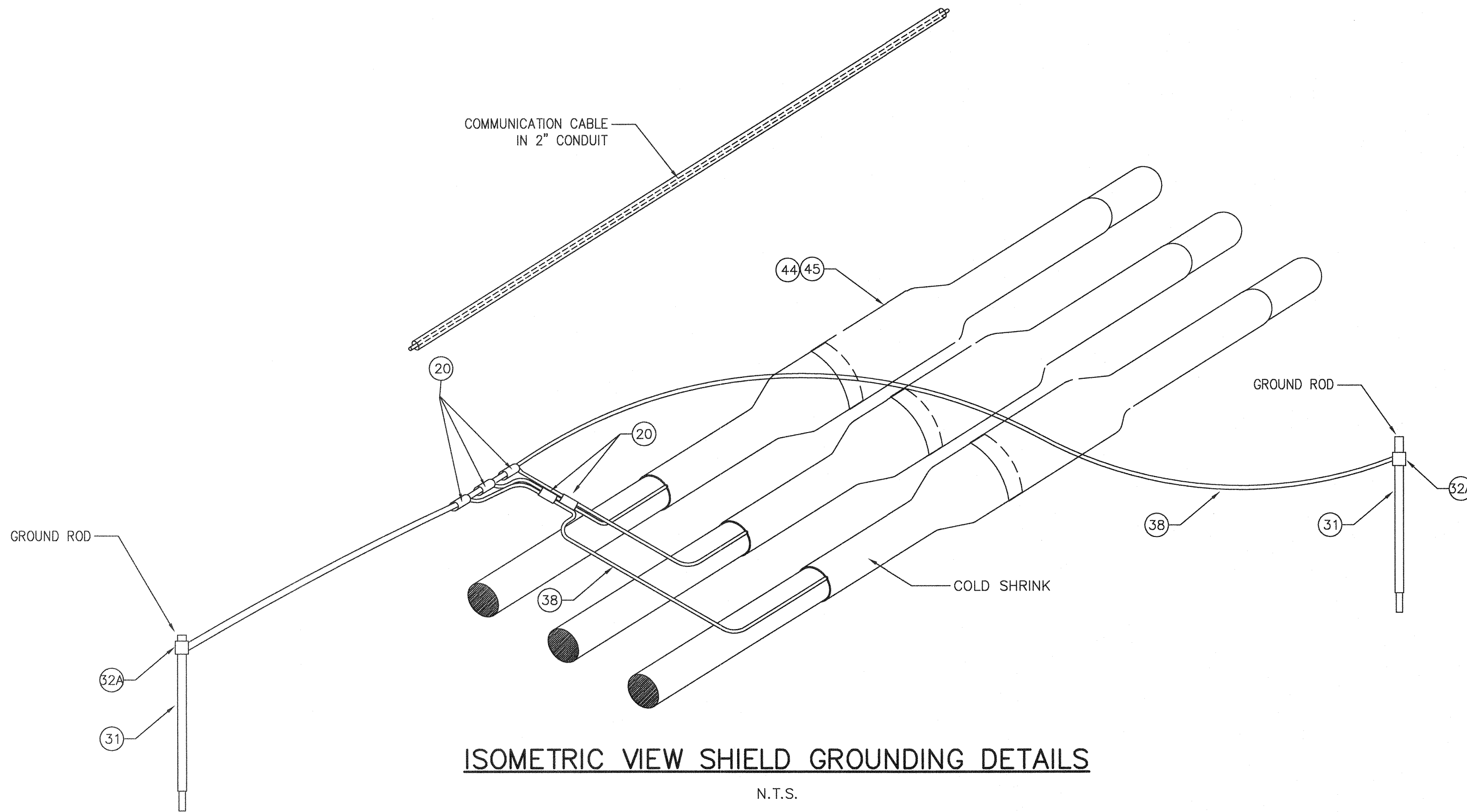


CABLE SHIELD GROUNDING DETAILS
NO CONDUCTOR SPLICE

N.T.S.

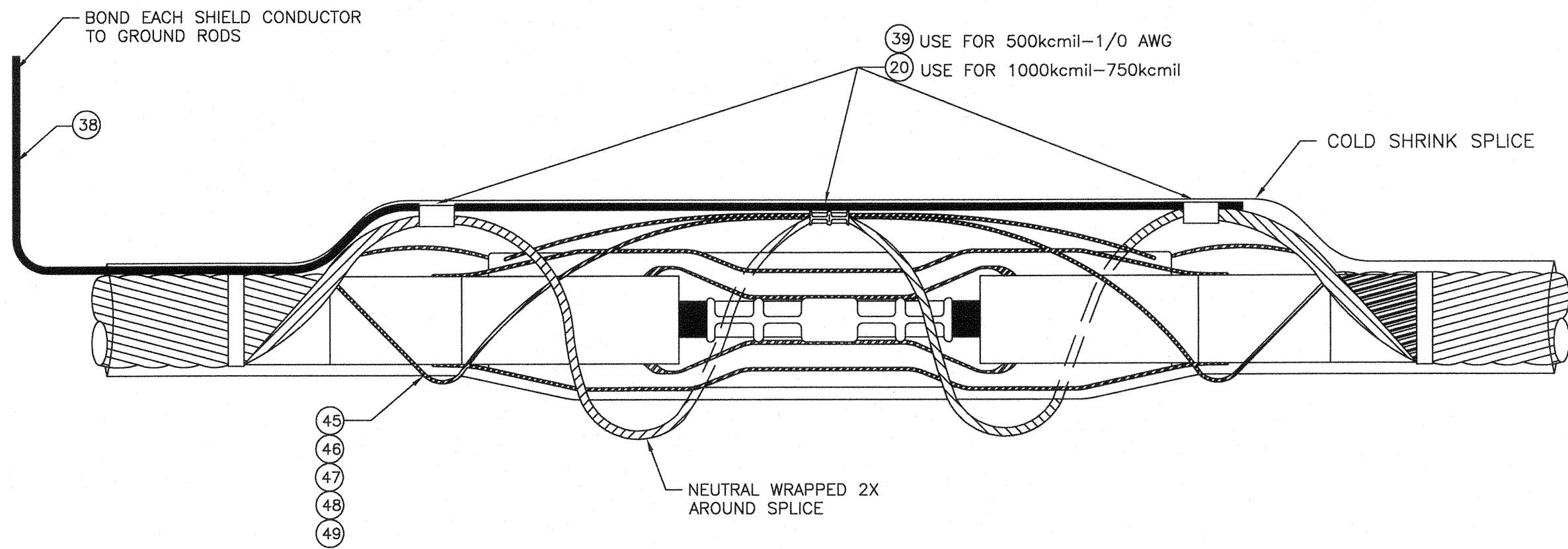


ISOMETRIC VIEW SHIELD GROUNDING DETAILS

N.T.S.

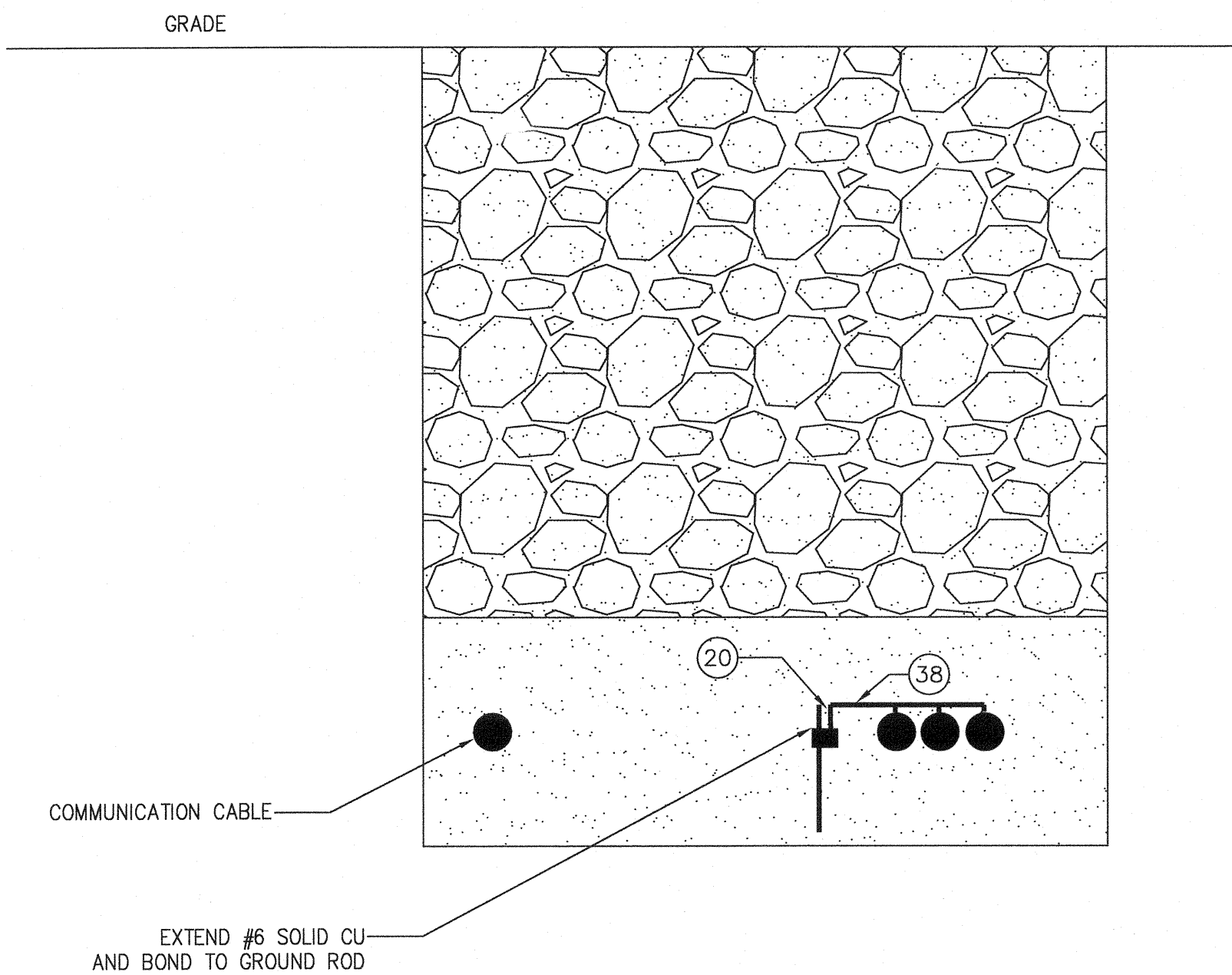
SEE NOTE 2

BILL OF MATERIALS - 34.5 KV CABLE SPLICE AND NEUTRAL GROUND					
ITEM	QUANTITY	UNIT	DESCRIPTION	MANUFACTURER	CATALOG
20	6	EA	CONNECTOR, COPPER COMPRESSION #6-1/0 TO #6-1/0		
31	2	EA	GROUND ROD, 5/8" x 8'		
32A	2	EA	CONNECTOR, COPPER, 1/2"-5/8" ROD TO #6-1/0	HUBBELL/ ANDERSON	GC103-01
38	9	FT	WIRE, #6 COPPER BARE, SOLID		
39	6	EA	CONNECTOR, COPPER COMPRESSION, #2-2/0 TO #2-#4		
43	*	EA	1/0-500 kcmil, NEUTRAL GROUNDING KIT (KIT OF 3)	RAYCHEM	JGK-MS-2
44	*	EA	750-1500kcmil, NEUTRAL GROUNDING KIT (KIT OF 3)	RAYCHEM	JGK-MS-3
45	*	EA	SPLICE ASSEMBLY, 35 KV, 1/0 AWG AL, COLD SHRINK	3M	5467A-1/0-AL
46	*	EA	SPLICE ASSEMBLY, 35 KV, 4/0 AWG AL, COLD SHRINK	3M	5467A-4/0-AL
47	*	EA	SPLICE ASSEMBLY, 35 KV, 350 kcmil AL, COLD SHRINK	3M	5467A-350-AL
48	*	EA	SPLICE ASSEMBLY, 35 KV, 750 kcmil AL, COLD SHRINK	3M	5468A-750-AL
49	*	EA	SPLICE ASSEMBLY, 35 KV, 1000 kcmil AL, COLD SHRINK	3M	5468A-1000-AL



CABLE SPLICE AND SHIELD GROUNDING DETAILS

N.T.S.



SECTION VIEW
CABLES IN TRENCH

N.T.S.

SEE NOTE 2

NOTE:

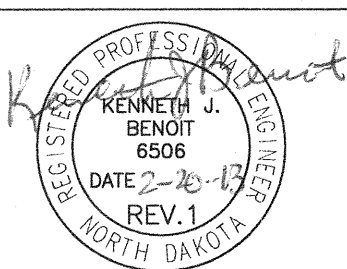
1. CABLE SHIELDS SHALL BE CONTINUOUSLY OR MULTIPPOINT GROUNDED NO LESS THAN FOUR TIMES PER MILE AND AT EVERY CABLE SPLICE/JOINT
2. ISOMETRIC AND SECTION VIEWS SHOW 34.5KV CABLES IN FLAT CONFIGURATION FOR CLARITY. CABLES SHALL BE INSTALLED IN TREFOIL CONFIGURATION PER DWG. E-CA-31
3. SPLICE COUNTS REQUIRED WILL BE BASED ON REEL LENGTHS UTILIZED.
4. GROUND RODS MUST BE INSTALLED FLUSH WITH TRENCH BOTTOM.
5. FOUR (4) NEUTRAL GROUNDS MUST BE INSTALLED EVERY ROLLING MILE. IF SPLICE POINTS, JUNCTION BOXES, AND THE SUBSTATION NEUTRAL GROUNDS DO NOT MEET THE 4 PER ROLLING MILE REQUIREMENT, NEUTRAL GROUNDING MUST BE INSTALLED.



PIKE ENERGY SOLUTIONS, LLC.
10101 Claude Freeman Drive, Suite 100W
Charlotte, NC 28262
ND License No. 954PE

Images in Drawing

A	RJG	RJG	CSF	7/8/11	60% DELIVERABLE
B	BNK	RJG	CSF	8/16/11	85% DELIVERABLE
C	BNK	CSF	CSF	9/20/11	90% DELIVERABLE
D	BNK	CSF	JLM	10/4/11	ISSUED FOR CONSTRUCTION
1	NJG	RJG	JLM	11/28/12	CONSTRUCTION REVISIONS, NO CHANGES
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION



CLIENT	7/8/118/16/119/20/110/4/11
BID	
CONSTRUCTION	
PERMITTING	
RELEASED TO/FOR	A B C O 1 2 3
	DATE RELEASED



Project Office:
BARR ENGINEERING CO.
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
55435-4803
Ph: 1-800-632-2277
Fax: (952) 832-2601
www.barr.com

Scale	N.T.S.
Date	07/08/11
Drawn	RJG
Checked	CSF
Designed	RJG
Approved	JLM



A WIND ENERGY INITIATIVE OF MINNESOTA POWER IN NORTH DAKOTA

BISON 3 WIND PROJECT MORTON & OLIVER COUNTIES, NORTH DAKOTA
COLLECTOR SYSTEM CABLE GROUNDING DETAIL

BARR PROJECT No. 34/33-1006
CLIENT PROJECT No.
DWG. No. E-CA-32
REV. No. 1